

# 1. Introduction

It is difficult to ignore the importance of sustainability. Daily news items on climate change, international commitments and emerging legislation constantly bring the subject to our attention. Whether driven by legislation, economics or social responsibility, it has become an increasingly important priority for government, business and individuals.

Indeed, Government has now followed up its 2005 UK Strategy for Sustainable Development, entitled 'Securing the Future', with a broader vision for 'one planet living'. It has also established a range of sustainable development indicators against which performance will be measured. All organisations now have a role to play in helping to meet national targets.

Local authorities and other agencies are becoming more accountable for their performance in promoting and implementing sustainable practices. Many have set relevant priorities to help influence the way sustainability is applied to projects, planning applications and procurement. Furthermore support and funding from public bodies, such as the National Lottery, is increasingly being linked to sustainability, placing an onus on partners to prove their environmental and social credentials.

It is essential that navigation authorities are able to understand and respond to sustainability issues and the inland waterways industry needs to be proactive in this regard throughout their operations. Indeed, the larger navigation authorities have already demonstrated their commitment by developing and maintaining their waterways in a sustainable manner by adopting policies and formulating guidance. The smaller independent authorities will also benefit from practicable and cost effective guidance. Navigation authorities need to be aware of increasing public expectations and understand that their work in this field will help to meet some of their wider objectives.



Sustainability must become a core value for all navigation authorities. Everyone needs to make a contribution and this document shows how navigation authorities can play their part. Since sustainable development is a wide and cross-cutting subject, there is undoubtedly a need to initially prioritise any actions. Operating sustainably will also mean that navigation authorities are able to comply more easily with the requirements of the Water Framework Directive and other European legislation.

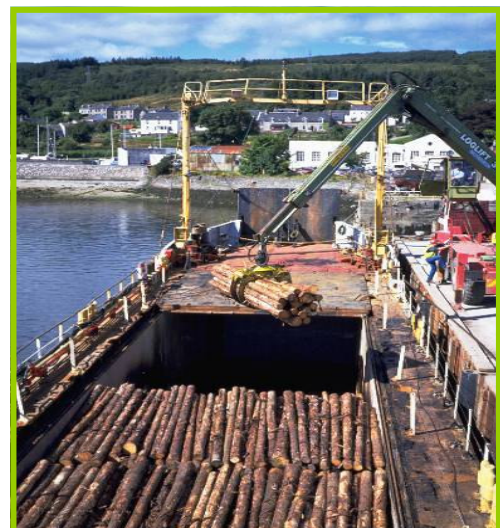
## Why is it important for navigation authorities to address sustainability?

Sustainability is a priority for all navigation authorities both nationally and locally. By working sustainably you will:

- show a commitment to the future
- help meet legal requirements
- conserve and improve the environment
- mitigate against the impacts of climate change
- help save money and resources
- win friends and influence others

In addition, it will help to integrate this document's messages on sustainability when applying any of AINA's other good practice guidance material across operational issues which are available by visiting [www.aina.org.uk](http://www.aina.org.uk)

AINA has identified the impacts of day-to-day operational work as being an area where their members can make a difference and can demonstrate that their performance is improving. The core of this guide therefore relates to these aspects of their work.



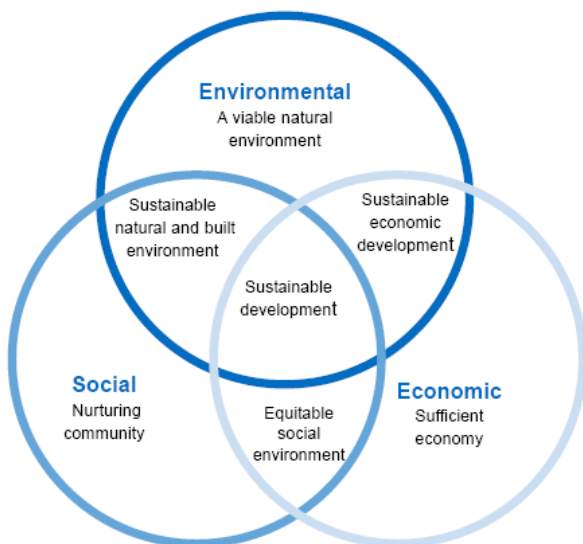
## 2. What is sustainability?

Sustainability means many things to many people. In simple terms it means ensuring the well-being and quality of life for everyone, now and for generations to come, by meeting social and environmental as well as economic needs. Wise decisions need to be made to balance these needs so that there is a net overall benefit, and so that limited impacts on one parameter can be balanced by greater gains on the other two. It means considering the wider impacts of our actions, creating a culture of responsibility which is often described as 'think globally, act locally'.

Perhaps the most widely used definition, used by the Bruntland Commission when reporting for the United Nations in 1987, is:

*'Development which meets the needs of the present without compromising the ability for future generations to meet their own needs.'*

International pressure and climate change have subsequently provided the impetus for further worldwide action, and over the past 20 years there has been a growing realisation that current growth and development is unsustainable. In other words we are living beyond our means. From loss of biodiversity to the increased use of resources, our way of life has been placing an increasing burden on the environment which can no longer be sustained.



The simple diagram above shows how environmental, economic and social issues overlap and influence the ways in which navigation authorities can plan to achieve sustainable development as part of their work and operations.

## 3. Government policy and legislation

In 2005, the UK Government launched its new strategy for sustainable development, 'Securing the Future'. This states that a major shift is now needed to help deliver new products, services and ways of working which as a lower impact on the environment and which benefits society. Defra oversees the delivery of the Strategy, but all public and private sector organisations, regardless of any formal duties now share a responsibility for ensuring that sustainability is built into their work.

Five shared UK-wide principles are listed in 'Securing the Future'. These have been agreed by the UK Government, Scottish Executive, Welsh Assembly Government and the Northern Ireland Administration, and are being used to guide production of subsequent policy in each country.

Priority areas identified for immediate action are as follows:

### Sustainable Consumption and Production

Sustainable consumption and production broadly aims to achieve more with less. This means not only looking at how goods and services are produced, but also the impacts of products and materials across their whole lifecycle.

### Climate Change and Energy

The effects of a changing climate can already be seen, and scientific evidence points to human activity as the primary cause of the release of greenhouse gases, such as carbon dioxide and methane. The Government seeks to secure a profound change in the way energy is generated and used and is determined to set a good example for others to follow.

The 2007 Climate Change Bill recognised the threats presented by climate change and energy consumption, and the Government is now committed to reducing the country's greenhouse gas emissions. The Bill will set legally-binding targets of a 60% reduction by 2050, with a 26-32% reduction by 2020. Whilst further investment in renewable energy will take place, energy efficiency measures will now need to be considered by all.

### Natural Resource Protection and Environmental Enhancement

Prudent use of natural resources is vital. We need to better understand our environmental limits to ensure that everyone lives in a good quality environment. This aspiration needs to be backed by a more integrated policy framework.

### Sustainable Communities

The government aims to create sustainable communities that embody the principles of sustainable development at a local level. This involves working to give communities more say in the decisions that affect them, and working in partnership at the right levels to ensure that plans are implemented.

## 6. Guidance and case studies

### CASE STUDY: Bristol Harbour Authority: Floating harbour

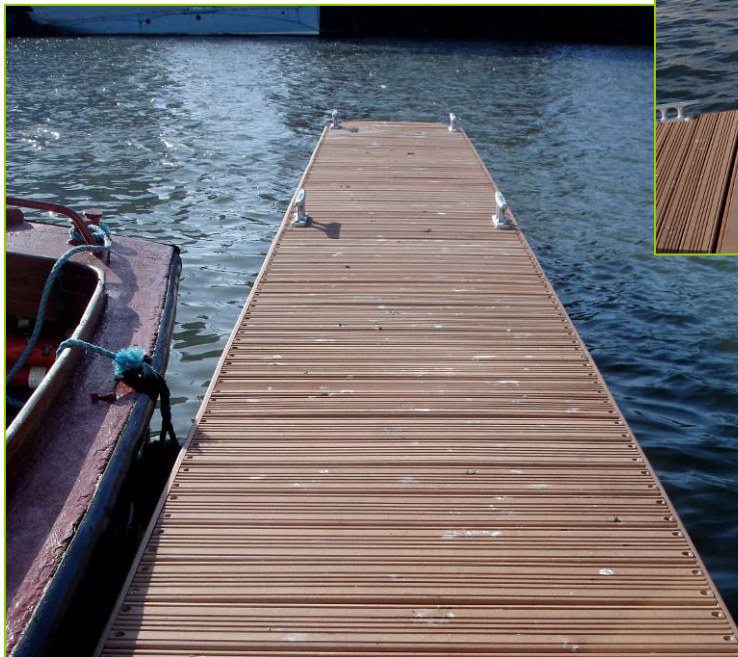
A major regeneration project adjacent to Bristol Harbour, located on a complex brownfield site near the city centre, has provided Bristol with a new series of public spaces, attractive leisure uses in refurbished industrial buildings and new waterside housing and boat facilities.

New moorings have been provided as part of the development, incorporating a large floating reed-bed area which has visual, ecological and water-quality benefits, for example surface water drainage from the development is filtered through the reed-beds. These environmental improvements are part of wider campaigns called 'Get On Board' and the Bristol Living Rivers Project, which seek to protect and improve environmental quality in the Floating Harbour as well as all of Bristol's watercourses over the long term.

Mooring pontoons have been developed using a novel material. 'Earthwood' decking is manufactured from a mix of post-industrial and post-consumer polymers, typically from bottles, drums and sheeting material. These are sourced from recycling companies within the UK and Ireland, whilst the wood-flour component is a by-product from timber production in Scotland. The forests from which the wood is sourced are FSC regulated, though since it ultimately contains less than 70% wood it cannot be formally certified as an FSC product.

'Earthwood' is made using 95% recycled materials and is itself completely recyclable. Importantly, it contains no harmful chemicals, glues, preservatives or agents, and it was considered for Bristol Harbour on the grounds of sustainability, safety and low maintenance requirements.

As a high density composite material it will not suffer from wet or dry rot, and neither is it prone to attack by wood boring insects, thus reducing the need for repair or replacement. It is also expected that its non-slip performance will exceed hard or soft wood timber decking in both wet or dry conditions (it has been tested and approved to British Standards for its anti-slip/skid resistance). In addition, the decking can be power washed without affecting its anti-slip properties and no harsh cleaning solutions or chemicals is required



## 6. Guidance and case studies

### CASE STUDY: Montgomery Canal, Tannant feeder: Solar energy to light meter house

Solar energy is now being used to light a meter house which controls water entering the Montgomery Canal feeder from the River Tannant just south of Llanymynech on the border of England and Wales. Since staff visits take place throughout the year, including during hours of darkness, a power source to supply both internal and external lights was required though the mains feed was some distance away. A standalone post and solar panel was installed at the point where water enters the feeder, and roof mounted solar panels power the lighting which is fitted with energy saving light bulbs. The system is activated by a remote control device operated by staff from their vehicle, and a 30 minute switch off delay allows enough time for inspection whilst ensuring that the system is not inadvertently left on all night.

The system was supplied and installed at a cost of approx £8,300. A mains connection would have been a similar cost, but using renewable energy avoided both reliance on mains electricity and the impact of ground disturbance on the rural local environment. A small cost saving over mains use will result since no additional standing charges will apply.



### CASE STUDY: Driffield Navigation: Proposed hydro-power installation

The Driffield Canal Trust is investigating the possibilities of incorporating micro-hydro power generation at three sites, all lock outlets, and all close to habitation with easy access to the electrical distribution system. Hydrological data has been obtained from the Environment Agency, which operates a venturi metering station close to the three sites. The Trust believes that each location would have the capacity to generate around 4kW, and the proposals would incorporate a turbine/generator into the bywash pipework around three of the most accessible locks, at Wansford, Whin Hill and Snakeholme.

Anticipated revenue could be around 10p/kWh for green electricity sold back to the grid, equivalent to approximately £3,000 per annum per site. Installation costs, however, could be in the region £15,000-20,000, plus fees, and ongoing costs would include the work required to keep the intakes clear of weed, together with other potential flow interruptions. The Trust is currently considering feasibility issues and ways forward.



Wansford Lock on the Driffield Navigation is one of the potential micro hydro-power locations being assessed by the Driffield Canal Trust

## 6. Guidance and case studies

### 6.4.2 Reducing road traffic

The transport sector (excluding international aviation) is currently responsible for approximately a quarter of total UK emissions, and 80% of this total is attributable to road use. Reducing car mileage is therefore a priority and often a little forward planning can result in lower vehicle use.

Navigation authorities can help to reduce road mileage in various ways, both through their own actions and by encouraging others, such as their contractors and customers, to adopt new or different approaches.

Examples include :

- promoting waterways as corridors for sustainable transport – cycling, walking, 'green' boating - in ways which encourage visitors and commuters, develop routes to school and foster greater links with local communities
- preparing travel plans for office locations and popular visitor sites
- maintaining and promoting inland waterways for freight traffic
- considering, where feasible, water transport for operational and construction purposes, to transport materials or waste to and from site
- sourcing local materials, services and labour in order to reduce road miles
- adopting best practice such as efficient working practices, for example, car sharing, and appropriate use of new technology such as video conferencing .

### CASE STUDY: Gloucester Docks: Travel plan

British Waterways prepared a travel plan for their offices in Gloucester Docks. The work was carried out following consultation with staff and was designed to help reduce reliance on car use, address the shortage of parking spaces, and find ways of encouraging new transport options for both staff and visitors. A small staff working group was established and a questionnaire produced to gauge views and opinions. Results showed that there was an interest in adopting different ways of travelling, linked to more flexible work patterns and remote working from other locations in the region.

The group proposed a number of options and alternatives all aimed at helping to reduce the overall impact of car travel by staff. These included park and ride, car sharing to meetings, shared lifts from home and access to all local public transport timetables and options via an intranet. Ideas for physical improvements included the installation of cycle racks and access to showers. Unfortunately, car parking pressures have continued to grow at Gloucester Docks and staff do not always have ready access to an immediate parking space. However, implementation of some of the travel plan proposals is intended to help resolve these issues, whilst supporting environmental measures. A new Sustrans route alongside the Gloucester & Sharpness Canal could also benefit staff and visitors.



Cycle racks can be installed to help encourage and support car free travel, and many attractive designs are now available.